

### **ABSTRACT**

A cryocooler cold end assembly is disclosed. The assembly includes a unitary external, outer housing. By constructing the housing from a single unitary metal shell, part count is reduced from prior art assemblies. Additionally, all brazing requirements previously  
5 necessary to secure and seal the components are eliminated. Further, due to one or more machining steps subsequent to manufacturing/forming the external sealed housing, the tolerances are improved. This allows for shrink to fit assembly of several components and also results in improved straight-line accuracy between the piston bore and the displacer cylinder. Due to this latter improvement, the need for a displacer liner is  
10 eliminated.